

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Cancelled)
2. (Withdrawn) A method according to claim 1, wherein the chip gripper is connected to a piston bearing pneumatically on the bondhead and movable in z direction, whereby the position of the piston and with it the z position of the chip gripper is controlled by means of a pressure prevailing in a pressure chamber, wherein a drive is present in order to move the bondhead in the z direction, whereby in step a, a predetermined pressure is applied to the pressure chamber so that the chip gripper takes up a limit position, whereby in step a, the bondhead is lowered and whereby in step b the raising of the needle has the effect that the chip gripper is moved out of the limit position.
3. (Withdrawn) A method according to claim 2, wherein in step c, vacuum is applied to the pressure chamber in order to abruptly detach the semiconductor chip from the needle.
4. (Withdrawn) A method according to claim 1 with which the bondhead is arranged stationary with reference to the z direction and with which the chip gripper is movable in the z direction by means of a pneumatic drive formed by two pressure chambers and a piston.
5. (Withdrawn) A method according to claim 1, wherein the z position of the chip gripper is measured after the step b in order to determine the actual z height of the surface of the picked semiconductor chip and wherein the position  $z_0$  is updated at specific points in time.

6. (Withdrawn) A method according to claim 2, wherein the z position of the chip gripper is measured after the step b in order to determine the actual z height of the surface of the picked semiconductor chip and wherein the position  $z_0$  is updated at specific points in time.

7. (Withdrawn) A method according to claim 3, wherein the z position of the chip gripper is measured after the step b in order to determine the actual z height of the surface of the picked semiconductor chip and wherein the position  $z_0$  is updated at specific points in time.

8-12. (Cancelled)

13. (Withdrawn) A method according to claim 1, wherein in step a, the lowering of the chip gripper to a position  $z_0$  takes place that is less than an average height of the surface of the semiconductor chips so that, on impact on the semiconductor chip, the chip gripper is deflected in relation to the bondhead, wherein the chip gripper bears pneumatically on the bondhead and wherein a sensor is integrated into the bondhead for measuring the z position of the chip gripper.

14. (Withdrawn) A method according to claim 2, wherein in step a, the lowering of the chip gripper to a position  $z_0$  takes place that is less than an average height of the surface of the semiconductor chips so that, on impact on the semiconductor chip, the chip gripper is deflected in relation to the bondhead, wherein the chip gripper bears pneumatically on the bondhead and wherein a sensor is integrated into the bondhead for measuring the z position of the chip gripper.

15. (Withdrawn) A method according to claim 3, wherein in step a, the lowering of the chip gripper to a position  $z_0$  takes place that is less than an average height of the surface of the

semiconductor chips so that, on impact on the semiconductor chip, the chip gripper is deflected in relation to the bondhead, wherein the chip gripper bears pneumatically on the bondhead and wherein a sensor is integrated into the bondhead for measuring the z position of the chip gripper.

16. (Withdrawn) A method according to claim 4, wherein in step a, the lowering of the chip gripper to a position  $z_0$  takes place that is less than an average height of the surface of the semiconductor chips so that, on impact on the semiconductor chip, the chip gripper is deflected in relation to the bondhead, wherein the chip gripper bears pneumatically on the bondhead and wherein a sensor is integrated into the bondhead for measuring the z position of the chip gripper.

17. (Withdrawn) A method according to claim 5, wherein in step a, the lowering of the chip gripper to a position  $z_0$  takes place that is less than an average height of the surface of the semiconductor chips so that, on impact on the semiconductor chip, the chip gripper is deflected in relation to the bondhead, wherein the chip gripper bears pneumatically on the bondhead and wherein a sensor is integrated into the bondhead for measuring the z position of the chip gripper.

18. (Withdrawn) A method according to claim 6, wherein in step a, the lowering of the chip gripper to a position  $z_0$  takes place that is less than an average height of the surface of the semiconductor chips so that, on impact on the semiconductor chip, the chip gripper is deflected in relation to the bondhead, wherein the chip gripper bears pneumatically on the bondhead and wherein a sensor is integrated into the bondhead for measuring the z position of the chip gripper.

19. (Withdrawn) A method according to claim 7, wherein in step a, the lowering of the chip gripper to a position  $z_0$  takes place that is less than an average height of the surface of the

semiconductor chips so that, on impact on the semiconductor chip, the chip gripper is deflected in relation to the bondhead, wherein the chip gripper bears pneumatically on the bondhead and wherein a sensor is integrated into the bondhead for measuring the z position of the chip gripper.

20. (Withdrawn) A method according to claim 8, wherein in step a, the lowering of the chip gripper to a position  $z_0$  takes place that is less than an average height of the surface of the semiconductor chips so that, on impact on the semiconductor chip, the chip gripper is deflected in relation to the bondhead, wherein the chip gripper bears pneumatically on the bondhead and wherein a sensor is integrated into the bondhead for measuring the z position of the chip gripper.

21. (New) A method for picking a semiconductor chip from a foil by a chip gripper, wherein the chip gripper is connected to a piston bearing pneumatically in a pressure chamber of a bondhead, wherein the bondhead is movable by means of a drive in a direction designated as z direction, wherein the chip gripper is movable relative to the bondhead in said z direction, and wherein the detaching of the semiconductor chip from the foil takes place with the aid of a needle, the method comprising the following steps:

- a) Applying a predetermined pressure to the pressure chamber of the bondhead so that the chip gripper takes up a limit position and lowering the bondhead to a predetermined position  $z_0$ ,
- b) Raising the needle to a predetermined position  $z_1$ , whereby the needle raises the semiconductor chip in order to bring the semiconductor chip into contact with the chip gripper and then to move the chip gripper out of said limit position, while the bondhead remains at the position  $z_0$ , and
- c) Raising the bondhead, whereby the semiconductor chip detaches itself from the needle.

22. (New) The method according to claim 21, wherein said predetermined position  $z_0$  of the bondhead is greater than an average height of the surface of the semiconductor chips on the foil so that the chip gripper does not yet touch the semiconductor chip.

23. (New) The method according to claim 22, further comprising applying vacuum to said pressure chamber in step c.

24. (New) The Method according to claim 21, wherein said predetermined position  $z_0$  of the bondhead is less than an average height of the surface of the semiconductor chips on the foil so that, on impact on the semiconductor chip, the chip gripper is deflected in relation to the bondhead.

25. (New) The method according to claim 24, further comprising applying vacuum to said pressure chamber in step c.

26. (New) The Method according to claim 21, further comprising  
measuring the actual  $z$  position of the chip gripper after step b,  
determining the  $z$  height of the surface of the picked semiconductor chip from the  
measured  $z$  position of the chip gripper, and  
updating said predetermined position  $z_0$  at specific points in time.

27. (New) The Method according to claim 22, further comprising  
measuring the actual  $z$  position of the chip gripper after step b,  
determining the  $z$  height of the surface of the picked semiconductor chip from the

measured z position of the chip gripper, and

updating said predetermined position  $z_0$  at specific points in time.

28. (New) The Method according to claim 23, further comprising

measuring the actual z position of the chip gripper after step b,

determining the z height of the surface of the picked semiconductor chip from the

measured z position of the chip gripper, and

updating said predetermined position  $z_0$  at specific points in time.

29. (New) The Method according to claim 24, further comprising

measuring the actual z position of the chip gripper after step b,

determining the z height of the surface of the picked semiconductor chip from the

measured z position of the chip gripper, and

updating said predetermined position  $z_0$  at specific points in time.

30. (New) The Method according to claim 25, further comprising

measuring the actual z position of the chip gripper after step b,

determining the z height of the surface of the picked semiconductor chip from the

measured z position of the chip gripper, and

updating said predetermined position  $z_0$  at specific points in time.

31. (New) A method for picking a semiconductor chip from a foil by a chip gripper, wherein

the chip gripper is connected to a piston pneumatically driven by a first pressure applied to a first pressure chamber and a second pressure applied to a second pressure chamber of a bondhead, and

wherein the detaching of the semiconductor chip from the foil takes place with the aid of a needle, the method comprising the following steps:

- a) Controlling said first pressure prevailing in said first pressure chamber and said second pressure prevailing in said second pressure chamber for lowering the chip gripper to a predetermined position  $z_0$ ,
- b) Raising the needle to a predetermined position  $z_1$ , whereby the needle raises the semiconductor chip in order to bring the semiconductor chip into contact with the chip gripper and then increase the  $z$  position of the chip gripper, and
- c) Controlling said first pressure prevailing in said first pressure chamber and said second pressure prevailing in said second pressure chamber for raising the chip gripper, whereby the semiconductor chip detaches itself from the needle.

32. (New) The method according to claim 31, wherein said predetermined position  $z_0$  of the bondhead is greater than an average height of the surface of the semiconductor chips on the foil so that the chip gripper does not yet touch the semiconductor chip.

33. (New) The method according to claim 32, further comprising applying vacuum to said first pressure chamber in step c.

34. (New) The Method according to claim 31, wherein said predetermined position  $z_0$  of the chip gripper is less than an average height of the surface of the semiconductor chips on the foil so that, on impact on the semiconductor chip, the chip gripper is deflected in relation to the bondhead.

35. (New) The method according to claim 34, further comprising applying vacuum to said first pressure chamber in step c.
36. (New) The Method according to claim 31, further comprising  
measuring the actual z position of the chip gripper after step b,  
determining the z height of the surface of the picked semiconductor chip from the measured z position of the chip gripper, and  
updating said predetermined position  $z_0$  at specific points in time.
37. (New) The Method according to claim 32, further comprising  
measuring the actual z position of the chip gripper after step b,  
determining the z height of the surface of the picked semiconductor chip from the measured z position of the chip gripper, and  
updating said predetermined position  $z_0$  at specific points in time.
38. (New) The Method according to claim 33, further comprising  
measuring the actual z position of the chip gripper after step b,  
determining the z height of the surface of the picked semiconductor chip from the measured z position of the chip gripper, and  
updating said predetermined position  $z_0$  at specific points in time.
39. (New) The Method according to claim 34, further comprising  
measuring the actual z position of the chip gripper after step b,  
determining the z height of the surface of the picked semiconductor chip from the



measured z position of the chip gripper, and

updating said predetermined position  $z_0$  at specific points in time.

40. (New) The Method according to claim 35, further comprising

measuring the actual z position of the chip gripper after step b,

determining the z height of the surface of the picked semiconductor chip from the

measured z position of the chip gripper, and

updating said predetermined position  $z_0$  at specific points in time.